

## Second Holography and Dense Matter Workshop (featuring Meeting of Compact Objects working group of the GW GdR)

ID de Contribution: 13

Type: **Non spécifié**

### Pairing beyond BCS

*mercredi 17 septembre 2025 10:00 (40 minutes)*

Neutron pairing and superfluidity have important consequences for pulsar glitches and neutron star cooling and have been studied for decades. Nevertheless, the density dependence of the pairing gap and of the critical temperature are still a matter of debate, mostly because of medium polarization (screening) effects. After a brief review of recent quantum Monte-Carlo results and screening calculations, I will discuss a new method similar to Bogoliubov many-body perturbation theory to include consistently different types of in-medium effects, including not only screening but also the effective mass, vertex corrections, and wave-function renormalization.

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**Classification de Session:** Compact Objects WG (GdR on Gravitational Waves)